



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

October 6, 1997

MEMORANDUM TO:

Chairman Jackson
Commissioner Dicus
Commissioner Diaz
Commissioner McGaffigan

FROM:

L. Joseph Callan
Executive Director for Operations

SUBJECT:

RULEMAKING FOR 10 CFR PARTS 50 AND 70, CRITICALITY
ACCIDENT REQUIREMENTS

In response to the SRM dated August 19, 1997, relative to SECY-97-155, this memorandum is to inform the Commission that the staff plans to incorporate into 10 CFR Part 50 the criteria that are presently used to grant exemptions to the criticality alarm requirements of 10 CFR Part 70 at nuclear power reactors. The SRM also directs the staff to issue appropriate generic communications regarding compliance and enforcement for the interim period until the rule can be appropriately corrected. The staff has scheduled this direct final rulemaking to reach the Commission by November 14, 1997. Therefore, the issuance of a generic communication may not be necessary,

The direct final rulemaking will be prepared to revise 10 CFR Parts 50 and 70 to state that, except for persons licensed to operate a light-water nuclear power reactor, each licensee authorized to possess special nuclear material (SNM) in quantities specified in the section is required to meet the requirements of 10 CFR 70.24. A new section would be added to 10 CFR Part 50 to state that individuals licensed to construct or operate a light-water nuclear power reactor have the option of either meeting the criticality alarm requirements of 10 CFR 70.24 in dry handling and dry storage areas for SNM or electing to comply with the criteria listed in the body of this new section. These criteria are contained in SECY-97-155, which the Commission approved on August, 19, 1997, and are repeated below.

1. Plant procedures do not permit more than one pressurized-water reactor or three boiling-water reactor fuel assemblies to be out of an approved storage configuration at one time.
2. The k-effective of the fresh fuel storage racks filled with fuel of the maximum permissible U-235 enrichment and flooded with pure water does not exceed 0.95, at a 95 percent probability, 95 percent confidence level.
3. If optimum moderation of fuel in the fresh fuel storage racks occurs when the fresh fuel storage racks are filled with low-density hydrogenous fluid, the k-effective corresponding to this optimum moderation does not exceed 0.98, at a 95 percent probability, 95 percent confidence level.

4. The k-effective of spent fuel storage racks filled with fuel of the maximum permissible U-235 enrichment and flooded with pure water does not exceed 0.95, at a 95 percent probability, 95 percent confidence level.
5. The quantity of SNM, other than nuclear fuel stored on site, in any given area is less than the quantity necessary for a critical mass.
6. Radiation monitors, as required by GDC 63, are provided in fuel storage and handling areas to detect excessive radiation levels and to initiate appropriate safety actions.
7. The maximum nominal U-235 enrichment of the fresh fuel assemblies is 5 weight-percent.

The milestones and completion dates for the direct final rule are as follows:

Completion of Division level review, RES:	September 29, 1997
Completion of Office level review, RES:	October 2, 1997
Technical review and concurrence by NRR, NMSS:	October 20, 1997
OGC review:	October 20, 1997
To EDO:	November 7, 1997
To Commission:	November 14, 1997

Estimated resources to conduct this rulemaking are approximately 0.3 FTE and no contract support dollars are required. These resources are contained within the FY 1997 through FY 1999 budgets.

The Office of General Counsel has no legal objection to this memorandum. The Office of the Chief Financial Officer has no resource objections to this paper. The Office of the Chief Information Officer concurs that there will be no information technology or management impacts.

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4. The k-effective of spent fuel storage racks filled with fuel of the maximum permissible U-235 enrichment and flooded with pure water does not exceed 0.95, at a 95 percent probability, 95 percent confidence level.
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*See previous concurrence

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